

**We claim:**

1. A process for the preparation of dimethylcumenes comprising alkylating a substrate comprising of one or more xylene isomers with an alkylating agent in the presence of a solid acid zeolite catalyst selected from ultrastable zeolite Y (Si/Al = 5 to 50) and Beta (Si/Al = 10 – 120), and separating the products formed in vapour phase.
2. A process as claimed in claim 1 wherein said substrate and alkylating agent are contacted with said solid acid zeolite catalyst at a temperature in the range of 80 - 250°C and for a period of at least 1 hour.
3. A process as claimed in claim 1 wherein the product is separated from the vapour phase by condensation at a temperature in the range of 0 - 3°C.
4. A process as claimed in claim 1 wherein the substrate is selected from *o*-xylene, *m*-xylene, *p*-xylene and any mixture thereof.
5. A process as claimed in claim 1 wherein the Si/Al ratio in said catalyst is between 5 to 20.
6. A process as claimed in claim 1 wherein the alkylating agent is selected from propylene and propyl alcohols such as isopropanol and n-propanol.
7. A process as claimed in claim 2 wherein the temperature of the reaction is in the range of 100 - 200°C.
8. A process as claimed in claim 2 wherein the temperature of the reaction is in the range of 120 - 180°C.
9. A process as claimed in claim 1 wherein the molar ratio of xylene substrate to the alkylating agent in the feed is in the range of from 1:2 to 20:1.
10. A process as claimed in claim 9 wherein the molar ratio of xylene substrate to the alkylating agent is in the range of 1:1 to 10:1.
11. A process as claimed in claim 9 wherein the molar ratio of xylene substrate to the alkylating agent is in the range of 1:2 to 5:1.
12. A process as claimed in claim 1 wherein the weight hourly space velocity (WHSV) of the feed is in the range of 0.5 to 30 h<sup>-1</sup>.
13. A process as claimed in claim 12 wherein the weight hourly space velocity (WHSV) of the feed is in the range of 1 to 20h<sup>-1</sup>.
14. A process as claimed in claim 12 wherein the weight hourly space velocity (WHSV) of the feed is in the range of 2 to 10h<sup>-1</sup>.
15. A process as claimed in claim 1 wherein the alkylation reaction is carried out in a fixed bed reactor or a batch reactor.



16. A process as claimed in claim 1 wherein *p*-xylene is alkylated using isopropanol in the presence of zeolite beta catalyst.
17. A process as claimed in claim 1 wherein *m*-xylene and *o*-xylene are alkylated using isopropanol as the alkylating agent in the presence of ultrastable zeolite Y (USY) as catalyst.
18. A process as claimed in claim 1 wherein a mixture of *p*-xylene and isopropyl alcohol in a molar ratio of 4:1 is reacted in a fixed bed reactor in the presence of ultrastable zeolite Y catalyst.

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